

Thallium(I) Salicylate and Phthalate: Syntheses and Structural Characterization

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Two new 2D polymers, thallium(I) hydrogensalicylate (**1**) and hydrogenphthalate (**2**), have been synthesized and characterized by elemental analysis, IR, ¹H NMR and ¹³C NMR spectroscopy. The single-crystal X-ray data show the coordination number of the Tl^I ions of compounds **1** and **2** to be four and six with the environment TlO₄ and TlO₆, respectively. The arrangement of the O atoms suggests a gap in the coordination geometry around the thallium atoms in both compounds, due to a stereo-chemically ‘active’ electron lone pair of Tl^I. There is another interaction between the thallium atom and the carbon atoms of an aromatic ring in compound **1**, giving a total hapticity of ten with the environment C₆O₄Tl.

Key words: Thallium, Crystal Structure, Lone Pair, Phthalate, Salicylate